



Docket No.: 245497US41X CONT

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313



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RE: Application Serial No.: 10/717,672

Applicants: Alexandre CORJON, et al.

Filing Date: November 21, 2003

For: APPARATUS FOR ACCELERATING  
DESTRUCTION OF A VORTEX FORMED BY A  
WING OF AN AIRCRAFT

Group Art Unit: 3644

Examiner: HOLZEN, S.

SIR:

Attached hereto for filing are the following papers:

**Reply Brief**

Our credit card payment form in the amount of \$0.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
ALEXANDRE CORJON, ET AL. : EXAMINER: HOLZEN, S.  
SERIAL NO: 10/717,672 :  
FILED: NOVEMBER 21, 2003 : GROUP ART UNIT: 3644  
FOR: APPARATUS FOR :  
ACCELERATING DESTRUCTION OF A  
VORTEX FORMED BY A WING OF AN  
AIRCRAFT

REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

This is a reply to the Examiner's Answer dated June 21, 2007. This Reply Brief addresses the assertions made in the Examiner's Answer with respect to the original grounds of rejection.

I. REAL PARTY-IN-INTEREST

The real part-in-interest is Airbus France S.A.S.

II. RELATED APPEALS AND INTERFERENCES

The status of related appeals and interferences is the same as provided in the Appeal Brief.

### III. STATUS OF CLAIMS

Claims 1, 2, 8-11, 14-20, 23-30, 33, and 36 have been finally rejected and form the basis for this appeal. Claims 3-7, 12, 13, 21, 22, 31, 32, 34, and 35 are withdrawn. Appendix VIII of the Appeal Brief includes a clean copy of appealed Claims 1, 2, 8-11, 14-20, 23-30, 33, and 36.

### IV. STATUS OF AMENDMENTS

No amendments after final rejection have been filed.

### V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 is directed to an aircraft including a wing and a perturbation device. The wing forms a vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy. The perturbation device is disposed adjacent an area of creation of the first co-rotating eddy. The perturbation device is configured to generate a periodic perturbation having a wavelength configured to excite at least one instability mode of the first co-rotating eddy to accelerate a destruction of the vortex. This aircraft is described in the specification from page 7, line 24 to page 10, line 16, as illustrated by Figure 1. Aircraft 2 includes wing 3A and perturbation device 11. Wing 3A forms vortex 5A at a rear portion thereof by merging first co-rotating eddy 7A with second co-rotating eddy 8A. Perturbation device 11 is disposed adjacent an area 10A of creation of the first co-rotating eddy 7A. Perturbation device 11 is configured to generate a periodic perturbation having a wavelength configured to excite at least one instability mode of first co-rotating eddy 7A to accelerate a destruction of vortex 5A.

Independent Claim 10 is directed to an aircraft including a wing and means for generating a periodic perturbation. The wing forms a vortex at a rear portion thereof by a

merging of a first co-rotating eddy with a second co-rotating eddy. The means for generating a periodic perturbation generates a periodic perturbation having a wavelength configured to excite at least one instability mode of the first co-rotating eddy. The means for generating is disposed adjacent an area of creation of the first co-rotating eddy. This aircraft is described in the specification from page 7, line 24 to page 10, line 16, as illustrated by Figure 1.

Aircraft 2 includes wing 3A and means for generating a periodic perturbation 11. Wing 3A forms vortex 5A at a rear portion thereof by merging first co-rotating eddy 7A with second co-rotating eddy 8A. Means for generating a periodic perturbation 11 is disposed adjacent an area 10A of creation of the first co-rotating eddy 7A. The means for generating a periodic perturbation 11 includes as a structural element the unstreamlined element 13 described from page 13, line 9 to page 14, line 10 and shown in Figure 2. Means for generating a periodic perturbation 11 is configured to generate a periodic perturbation having a wavelength configured to excite at least one instability mode of first co-rotating eddy 7A to accelerate a destruction of vortex 5A.

Independent Claim 16 is directed to an aircraft including a first and a second wing and a first and a second perturbation device. The first wing forms a first vortex at a rear portion thereof by a merging of a first co-rotating eddy with a second co-rotating eddy. The second wing forms a second vortex at a rear portion thereof by a merging of a third co-rotating eddy with a fourth co-rotating eddy. The first perturbation device is disposed adjacent an end of a first flap of the first wing. The second perturbation device is disposed adjacent an end of a second flap of the second wing. The first and second perturbation devices are configured to generate periodic perturbations having wavelengths configured to excite instability modes of the first and third co-rotating eddies. Diameters of the first and second contra-rotating vortices with excited instability modes are greater than a predetermined proportion of a distance between the first and second contra-rotating vortices. This aircraft is described in

the specification from page 7, line 24 to page 10, line 16, as illustrated by Figure 1. Aircraft 2 includes first wing 3A and second wing 3B. First wing 3A forms first vortex 5A at a rear portion thereof by merging first co-rotating eddy 7A with second co-rotating eddy 8A. Second wing 3B forms second vortex 5B at a rear portion thereof by merging third co-rotating eddy 7B with fourth co-rotating eddy 8B. First perturbation device 11 is disposed adjacent an end of a first flap 6A of the first wing 3A. Second perturbation device 11 is disposed adjacent an end of a second flap 6B of the second wing 3B. The first and second perturbation devices 11 are configured to generate periodic perturbations having wavelengths configured to excite instability modes of the first and third co-rotating eddies 7A and 7B, respectively. Diameters of the first and second contra-rotating vortices 5A and 5B, respectively, with excited instability modes are greater than a predetermined proportion of a distance D between the first and second contra-rotating vortices 5A and 5B, respectively.

#### VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are whether Claims 1, 2, 8-11, 14-20, 23-30, 33, and 36 are anticipated under 35 U.S.C. §102(b) by Yuan (U.S. Patent No. 3,936,013), or in the alternative, are unpatentable under 35 U.S.C. §103(a) over Yuan in view of ordinary skill in the art.

#### VII. ARGUMENTS

The Examiner's Answer asserts that patentable weight has been given to the features of Claim 1, but then concludes that such features are simply a desired outcome. The Examiner's Answer further concludes that the phrase "configured to excite" "is limiting only in the sense that the prior art must be capable exciting the at least one instability mode to read the limitation. It is the examiner's position that Yuan teaches this capability."

However, Applicant asserts that Yuan does not explicitly teach or suggest generating a perturbation having any *particular* wavelength, much less a wavelength configured to excite at least one instability mode of the first co-rotating eddy to accelerate a destruction of a vortex. In fact, no portion of Yuan has been cited as teaching the generation of a perturbation having any particular wavelength. Thus, the Examiner's Answer is apparently asserting that Yuan inherently teaches the features of the invention recited in Claim 1.

The Examiner's Answer generally asserts that Yuan teaches the creation of a perturbation. At best, the Examiner's Answer is asserting that the device described by Yuan *may* create a perturbation having a wavelength configured to excite at least one instability mode of a first co-rotating eddy to accelerate destruction of a vortex. However, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). (Emphasis in original). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). (Emphasis in original). See MPEP §2112. In the present case, it is respectfully submitted that no evidence or reasoning has been provided to show that the device of Yuan *necessarily* includes a perturbation device configured to generate a perturbation having a wavelength configured to excite at least one instability mode of a first co-rotating eddy to accelerate destruction of a vortex. Accordingly, Yuan does not explicitly or inherently teach or suggest "a perturbation device" as defined in Claim 1.

In a similar manner, Yuan does not explicitly or inherently teach or suggest "means for generating" as defined in Claim 10 or "a first perturbation device" and "a second perturbation device" as defined in Claim 16. Consequently, independent Claims 1, 10, and

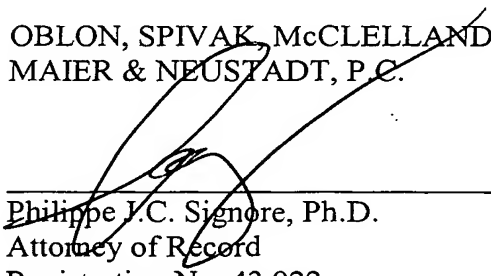
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16 are believed to define over the cited art for at least the reasons discussed herein and in the Appeal Brief.

It is respectfully requested that the outstanding rejections be REVERSED.

Respectfully submitted,

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